

WHAT IS CLAIMED IS:

1. An output level adjusting method of a multi-carrier transmitter, comprising:
calculating a PAR (peak to average ratio) of a multi-carrier signal;
comparing the calculated PAR with a target PAR; and
controlling a level of the multi-carrier signal based on a result of the comparison.
2. The method of claim 1, wherein the level controlling step includes:
attenuating the multi-carrier when the calculated PAR is less than the target PAR; and
increasing a gain of the multi-carrier signal when the calculated PAR is greater than the target PAR.
3. The method of claim 1, wherein the multi-carrier signal is attenuated in accordance with the calculated PAR.
4. The method of claim 1, wherein a gain of the multi-carrier signal is increased based on a difference between average power and target power.
5. An output level adjusting method of a multi-carrier transmitter, comprising:
calculating a PAR (peak to average ratio) of a multi-carrier signal;
comparing the calculated PAR with a target PAR; and

controlling a level of the multi-carrier signal by selectively performing one of an ALC (automatic level control) and an AGC (automatic gain control) based on a result of the comparison.

6. The method of claim 5, wherein the ALC is performed when the calculated PAR is less than the target PAR.

7. The method of claim 5, wherein the AGC is performed when the calculated PAR is greater than the target PAR.

8. The method of claim 5, wherein the level controlling step includes:
attenuating the multi-carrier signal in accordance with a pertinent PAR when the calculated PAR is less than the target PAR; and
increasing a gain of the multi-carrier signal based on a difference between average power and target power when the calculated PAR is greater than the target PAR.

9. An output level adjusting circuit of a multi-carrier transmitter, comprising:
an average power measuring unit which measures an average power of a multi-carrier signal;
a PAR calculator which calculates a PAR (peak to average ratio) of the multi-carrier signal based on the measured average power;

a level controller function which selectively performs one of an ALC (automatic level control) function and an AGC (automatic gain control) function based on the calculated PAR; and

a signal level adjuster which adjusts a level of the multi-carrier signal based on a control signal generated from the selected function performed by the level controller.

10. The circuit of claim 9, wherein the calculated PAR is obtained by subtracting average power from a maximum power of a power amplifier.

11. The circuit of claim 9, wherein the level controller includes:
an attenuator which attenuates the multi-carrier signal to a certain level;
a gain controller which increases a gain of the multi-carrier signal; and
a comparator which outputs a comparison signal for selectively operating the attenuator and the gain controller after comparing the calculated PAR (peak to average ratio) with a target PAR.

12. The circuit of claim 11, wherein the attenuator is operated when the calculated PAR is less than the target PAR, and the gain controller is operated when the calculated PAR is greater than the target PAR.

13. The circuit of claim 11, wherein the attenuator outputs the control signal in the form of an attenuation signal corresponding to the calculated PAR.

14. The circuit of claim 11, wherein the gain controller outputs the control signal in the form of a gain signal corresponded to a difference between the measured average power and a target power of the multi-carrier signal.

15. An output level adjusting circuit of a multi-carrier transmitter, comprising:
an average power measuring unit which measures an average power of a multi-carrier signal;
a PAR calculator which calculates a PAR (peak to average ratio) of the multi-carrier signal using the measured average power;
an attenuator which attenuates the multi-carrier signal;
a gain controller which increases a gain of the multi-carrier signal;
a comparator which outputs a comparison signal for selectively operating the attenuator and the gain controller after comparing the calculated PAR (peak to average ratio) with a target PAR; and
a multiplier which adjusts a level of the multi-carrier signal based on an output signal of the selected one of the attenuator and the gain controller.

16. The circuit of claim 15, wherein the PAR of the multi-carrier signal is obtained by subtracting the average power from a maximum power of the power amplifier.

17. The circuit of claim 15, wherein the attenuator is operated when the calculated PAR is less than the target PAR, and the gain controller is operated when the calculated PAR is greater than the target PAR.

18. The circuit of claim 15, wherein the attenuator outputs an attenuation signal corresponding to the calculated PAR, and the gain controller outputs a gain signal corresponding to difference between the average power and the target power of the multi-carrier signal.

19. A method for controlling a multi-level transmitter, comprising:
calculating a power value of a multi-carrier signal of the transmitter; and
controlling a level of the multi-carrier signal based on the calculated power value.

20. The method of claim 19, wherein the controlling step includes:
increasing the level of the multi-carrier signal based on the calculated power value.

21. The method of claim 20, wherein the increasing step includes:
increasing the level of the multi-carrier signal by increasing a gain of a power amplifier of the transmitter.

22. The method of claim 19, wherein the controlling step includes:
comparing the calculated power value to a reference power value; and
increasing a gain of the multi-carrier signal based on a result of the
comparison.

23. The method of claim 22, wherein increasing the gain of the multi-carrier signal
is performed when the calculated power value is greater than the reference power value.

24. The method of claim 19, wherein the controlling step includes:
comparing the calculated power value to a reference power value; and
attenuating the multi-carrier signal based on a result of the comparison.

25. The method of claim 24, wherein the attenuating step is performed when the
calculated power value is less than the reference power value.

26. The method of claim 19, wherein the calculated power value is a peak-to-
average ratio (PAR) of the multi-carrier signal.

27. The method of claim 26, further comprising:
calculating the PAR based on a difference between a measured average power
of the multi-carrier signal and a reference power.

28. The method of claim 27, wherein the reference power is based on a maximum power of a power amplifier of the transmitter.

29. A controller for a transmitter, comprising:
a detector which detects a power value of a multi-carrier signal of the transmitter; and
a processor which adjusts a level of the multi-carrier signal based on the power value.

30. The controller of claim 29, wherein the processor increases the level of the multi-carrier signal based on the power value.

31. The controller of claim 30, wherein the processor increases the level of the multi-carrier signal by increasing a gain of a power amplifier of the transmitter.

32. The controller of claim 29, wherein the detector includes a comparator which compares the power value to a reference power value, and wherein the processor increases a gain of the multi-carrier signal based on a result of the comparison.

33. The controller of claim 32, wherein the processor increases the gain of the multi-carrier signal when the power value is greater than the reference power value.

34. The controller of claim 29, wherein the detector includes a comparator which compares the power value to a reference power value, and wherein the processor attenuates the multi-carrier signal based on a result of the comparison.

35. The controller of claim 34, wherein the processor attenuates the multi-carrier signal when the calculated power is less than the reference power value.

36. The controller of claim 29, wherein the power value is a peak-to-average ratio (PAR) of the multi-carrier signal.

37. The controller of claim 36, wherein the detector includes:
a calculator which calculates the PAR based on a difference between a measured average power of the multi-carrier signal and a reference power.

38. The controller of claim 37, wherein the reference power is based on a maximum power of